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# A new species of *Corinnomma* (Araneae: Corinnidae) from southern and eastern Africa, with taxonomic notes on *C. olivaceum* and *C. semiglabrum*

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## ABSTRACT

Afrotropical species of the ant-mimicking castianeirine genus *Corinnomma* Karsch (Araneae: Corinnidae) are studied. The female of *Apochinomma semiglabrum* Simon, 1896 is redescribed and the male is described for the first time, and based on these descriptions this species is transferred to *Corinnomma*. A new species, *C. lawrencei* sp. n., is described from Tanzania, Mozambique and South Africa. The taxonomic status of *C. olivaceum* Simon, 1896 is discussed, including the first illustrations of the female genitalic structures. An English translation of Simon's (1896) Latin description of *C. olivaceum* is provided. A key to the three known species of *Corinnomma* occurring in the region is given. The biology and ant mimicry of *C. semiglabrum* and *C. lawrencei* sp. n. are briefly discussed. Both species occur on the ground, leaf litter or low foliage, and have colouration and behavioural traits that make them particularly efficient mimics of *Polyrachis gagates* Smith, 1858 ants. Neither species appears to feed on their model.

KEY WORDS: Araneae, Corinnidae, *Apochinomma*, *Corinnomma*, *Merenius*, ant-mimicry, new species, Afrotropical.

## INTRODUCTION

The genus *Corinnomma* Karsch, 1880 is one of eight genera included in the subfamily Castianeirinae (Araneae: Corinnidae) occurring in the Afrotropical region (Dippenaar-Schoeman & Jocqué 1997; Bosselaers & Jocqué 2000). This genus is poorly known in Africa, and only a single species, *C. olivaceum* Simon, 1896 from Ethiopia, has been described to date (Simon 1896). All known species are believed to be ant-mimics (Deeleman-Reinhold 2001), with many species occurring in South-East Asia. These species have been studied recently by Deeleman-Reinhold (1992, 2001).

In this paper, the species complement of Afrotropical *Corinnomma* is increased to three through the description of a new species and the transfer of *Apochinomma semiglabrum* Simon, 1896 to *Corinnomma*. The genus *Apochinomma* Pavesi, 1881 in the Afrotropical region is consequently reduced to the type species, *A. formicaeforme* Pavesi, 1881. This is the second paper in a series on the Afrotropical Castianeirinae, and follows the revision of the genus *Graptartia* Simon, 1896 (Haddad 2004).

## MATERIAL AND METHODS

All specimens were observed for description under a stereo microscope in 70% ethanol. The epigynes of *C. semiglabrum* and paratypes of *C. lawrencei* sp. n. were dissected, cleared for eight minutes in a Branson 3200 ultrasonic bath in 70% ethanol, and observed in 70% ethanol. No fresh material of *C. olivaceum* was available for study, and the holotype remains undissected. All measurements are provided in millimetres (mm), with a range of extremes given for body measurements of the largest and smallest specimens of each species. Leg lengths and eye interdistances are provided for the largest specimens of each sex. Leg spination in the descriptions of *C. semiglabrum* and *C. lawrencei* sp. n. follows the format of Bosselaers and Jocqué (2000), and genitalic morphology follows Haddad (2004).

The following abbreviations are used in the text:

AER – anterior eye row
AL – abdomen length
ALE – anterior lateral eye
AME – anterior median eye
AW – abdomen width
CL – carapace length
CW – carapace width
*do* – dorsal
*dtr* – dorsal trichobothria
FL – fovea length
PER – posterior eye row
*pl* – prolateral
PLE – posterior lateral eye
*plv* – prolateral ventral
PME – posterior median eye
*rl* – retrolateral
*rlv* – retrolateral ventral
SL – sternum length
SW – sternum width
TL – total length
*vt* – ventral terminal

Material for scanning electron microscopy was dehydrated through a graded ethanol series and then critical-point dried in an argon chamber. Specimens were mounted on stubs, sputter-coated three times with gold for two minutes, and studied in a JEOL WinSEM at 10 kV. Digitised micrographs were taken of the male emboli.

Holotype and paratype label data are quoted as they appear. A slash (/) indicates the end of a line of print, and two slashes (//) signify data on a further label. Significant supplementary or qualifying information is presented in square parentheses when considered necessary.

Material used in this study is deposited in the following institutions (curators are named in parentheses):

MNHN – Muséum National d'Histoire Naturelle, Paris, France (C. Rollard).
NCA – National Collection of Arachnida, ARC–PPRI, Pretoria, South Africa (A. Dippenaar-Schoeman).
NMZ – National Museum of Zimbabwe, Bulawayo, Zimbabwe (M. FitzPatrick).
SAMC – South African Museum, Cape Town, South Africa (M. Cochrane).

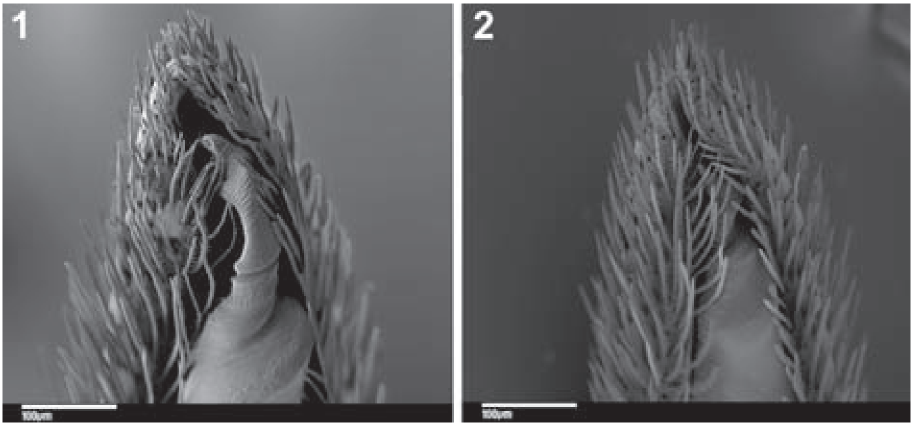
## TAXONOMY

### *Corinnomma* Karsch, 1880

Type species: *Corinna severa* Thorell, 1877.

Diagnosis: The Afrotropical *Corinnomma* species studied differ from the Asian species, which have a procurved PER, by having a recurved PER. Otherwise, colouration and morphology are similar to the Asian species. The eye characteristics are shared with Afrotropical species of *Apochinomma* and *Merenius* Simon, 1910. The PER of *Apochinomma* differs from Afrotropical *Corinnomma* by being very strongly recurved with the eyes small and separated by approximately four times their diameter, while *Corinnomma* has relatively larger eyes situated more closely together. *Apochinomma* also have a cephalothorax that is twice as long as wide, as well as a globose abdomen, which differs from the more compactly built *Corinnomma*. Afrotropical *Corinnomma* are more similar to *Merenius*, having similar eye arrangements and somatic morphology. *Corinnomma* are different by having a dark silver grey colouration with black transverse bands on the abdomen, while *Merenius* have dark grey to black colouration with a median white or cream marking running the length of the abdomen.

Description: Medium-sized spiders, 5.5–8 mm in length; female more robustly built than male. Carapace narrow in ocular region, broadest at midpoint, narrowest posteriorly; AER procurved or straight, medians sometimes slightly larger than laterals; PER slightly recurved, eyes subequal in size; colouration black, covered with silvery-grey plumose setae and black straight setae; surface finely wrinkled. Chelicerae with two promarginal and two retromarginal teeth. Sternum shield-shaped, dark-brown to black. Leg formula 4123; legs with several short stout spines and straight setae; plumose setae scattered on femora and tibiae; scopulae well developed on metatarsi and tarsi; well developed paired tarsal claws with dense claw tufts; proximal leg segments black with yellow bands or stripes, metatarsi brown and tarsi yellow. Abdomen oval, broadest in posterior third; dorsal scutum entire in males, extending to two-thirds abdomen length in females; integument dark brown, densely covered with silver-grey plumose setae, interspersed with short straight black setae; three or four black bands, comprising black plumose setae, in anterior two-thirds of abdomen, simulating abdominal segments of ant models; bands prominent dorsally, extending laterally, fusing ventrally; inframamillary sclerite absent in females, present in males. Spinnerets in close group, anterior lateral spinnerets largest, sub-conical. Female with paired copulatory openings situated laterally in sclerotised epigyne; copulatory openings situated in broad or narrow curved ridge; entrance ducts short, curving towards anterior spermathecae; spermathecae large and oval, terminal receptacles kidney-shaped. Male palp typically castianeirine; cymbium compact and quite broad, covered dorsally with short straight black setae interspersed with thickened setae; bulbus compact and pear-shaped, bulging prolaterally, with internal ducts visible through integument; median apophysis absent; embolus thickened and long, often formed on a stalk, with variable distal structure, either claw-like or with a single compact coil (Figs 1, 2).



Figs 1, 2. Scanning electron micrographs of male emboli of Afrotropical *Corinnomma* species: (1) *C. semiglabrum* (Simon); (2) *C. lawrencei* sp. n.

## Key to Afrotropical species of *Corinnomma*

1 Entrance ducts of female epigyne initially directed anteriorly (Fig. 17); PME–PME distance nearly double PME–PLE distance ................................ *olivaceum* Simon

– Entrance ducts of female epigyne initially directed medially or posteriorly; PME–PME distance less than 1.5 times PME–PLE distance ........................................ 2

2 Entrance ducts of female epigyne in a U-shape, initially directed posteriorly, then medially and anteriorly (Figs 5–7); male palpal embolus on an extended stalk, claw-like (Fig. 1); female CL to CW ratio 3:2 ... *semiglabrum* (Simon), **comb. n.**

– Entrance ducts of female epigyne initially directed medially (Figs 12, 13); male palpal embolus originating on a short stalk, with a single compact coil (Fig. 2); female CL to CW ratio nearly 5:3 ............................................... **lawrencei** sp. n.

## *Corinnomma semiglabrum* (Simon, 1896), **comb. n.**

Figs 1, 3–9

*Apochinomma semiglabrum*: Simon 1896: 409.

Diagnosis: This species is recognised by the large, semi-circular depressions in which the copulatory openings are found, and by the U-shaped entrance ducts of the epigyne. The male can be recognised easily by the claw-like palpal embolus, which is distinctively coiled in other species.

Redescription:

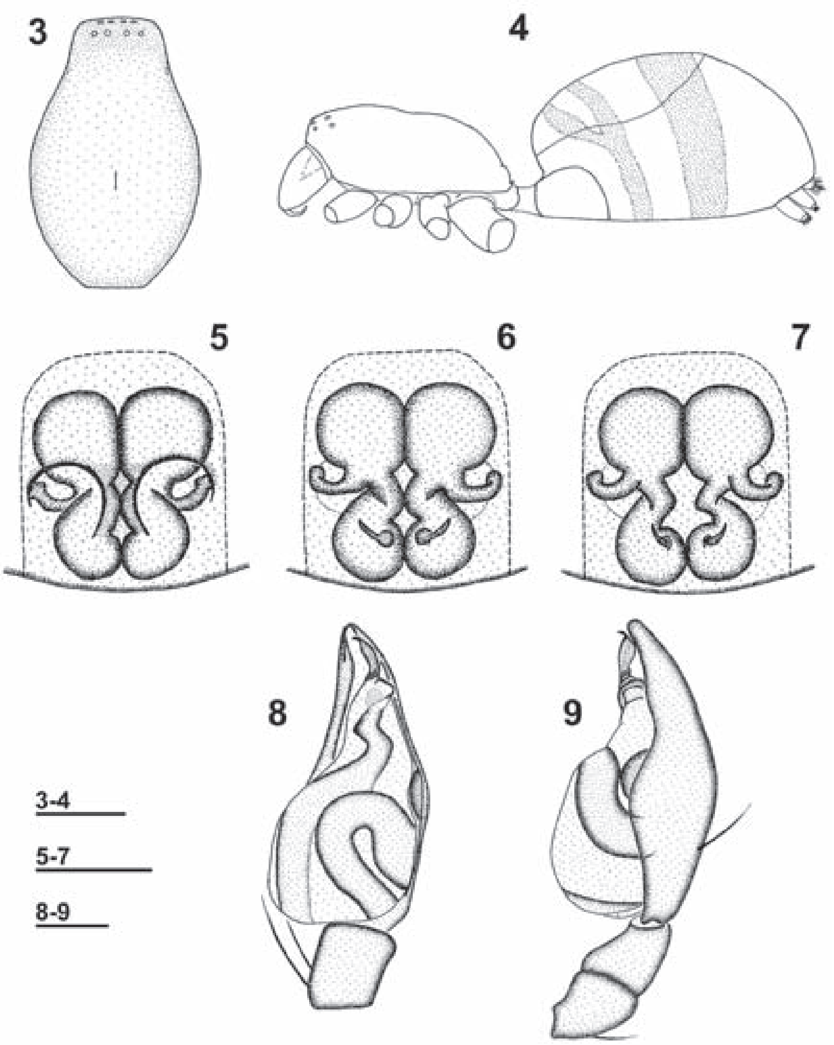
*Female*.

Measurements: CL 2.9–3.5, CW 1.9–2.2, AL 3.6–3.8, AW 2.6–2.8, TL 7.1–7.9, FL 0.18–0.25, SL 1.43–1.65, SW 0.98–1.1. Interdistances between eyes: AME–AME 0.10, AME–ALE 0.07, ALE–ALE 0.44, PME–PME 0.20, PME–PLE 0.16, PLE–PLE 0.74.

Length of leg segments (sequence from femur to tarsus, and total): I 2.30+0.90+2.25+1.93+1.30=8.68; II 2.05+1.00+1.75 +1.65+1.20=7.65; III 1.95+0.90+1.35+1.75+0.85=6.80; IV 2.45+0.90+2.25+2.55+0.83=8.98.

*Cephalothorax*: Carapace dark brown to nearly black, finely wrinkled, clothed in very short white setae; elongate, broadest at midpoint (Fig. 3); highest at nearly one-third its length (Fig. 4). Fovea distinct, located slightly posterior to carapace midpoint; striae black, radiating outwards from fovea, fused to black markings laterally on carapace. AER procurved, eyes subequal in size; PER very slightly recurved, laterals very slightly larger than medians; all eyes surrounded by black rings; scattered long white setae on clypeus. Chelicerae dark brown, bulging very slightly beyond anterior margin of carapace (Fig. 4); long white setae on prolateral margin, scattered between short white setae; two teeth on promargin, proximal tooth bifid with single base; two simple teeth on retromargin. Sternum dark brown, nearly black, with faint black mottling; surface slightly granular; densely clothed with short white setae medially, and longer white setae near margins; single long black seta on sternum near each coxal base.

*Legs*: Femora I and II dark brown in proximal half, yellow distally; dark brown *do* stripe extending to end of femora; femur II with second *pl* stripe extending to three-quarters femur length; femora III and IV dark brown, with yellow marking *pl* at distal end. Patella I yellow with dark brown *rlv* stripe; patella II yellow with brown *plv* and *rlv* stripes; patellae III and IV dark brown. Tibiae I and II yellow *do* with brown median



Figs 3–9. *Corinnomma semiglabrum* (Simon): (3) female cephalothorax, dorsal view; (4) female general habitus, lateral view; (5) female (Tembe), epigyne, ventral view; (6) female (Tembe), vulva, dorsal view; (7) female (Lewombo), variation of vulva, dorsal view; (8, 9) male (Bulawayo), left palp, ventral and retrolateral views. Scale bars: Figs 3, 4 = 1.0 mm; Figs 5–9 = 0.25 mm.

stripe, brown *vt* with yellow median stripe; tibiae III and IV dark brown. All metatarsi brown, with yellow distal tips. All tarsi yellow, brown in *do* proximal half; black markings on legs comprising plumose setae. Leg spination as follows: femora: I *pl* 1 *do* 3, II *do* 3, III *pl* 2 *do* 3 *rl* 1, IV *pl* 2 *do* 3 *rl* 1; patellae: all with 1 distal *dtr*; tibiae: I *plv* 3 *rlv* 2, II *plv* 2 *rlv* 2, III *pl* 2 *rl* 2 *plv* 2 *rlv* 2 *vt* 2, IV *pl* 2 *rl* 2 *plv* 2 *rlv* 1 *vt* 2; metatarsi: I *plv* 2 *rlv* 2, II *plv* 2 *rlv* 2, III *pl* 3 *rl* 2 *plv* 2 *rlv* 2 *vt* 3, IV *pl* 3 *rl* 3 *plv* 2 *rlv* 2 *vt* 2; all tibiae and metatarsi with numerous *dtr*, increasing in size distally. Palp dark brown; femur *do* 1; patella *pl* 1 *do* 1; tibiae *pl* 2 *do* 1; tarsus *pl* 2 (basal) *pl* 1 (median) *vt* 2. Single small terminal pectinate claw.

*Abdomen*: Oval, slightly globose, integument grey, broadest at two-thirds its length; leathery dorsal scutum present, dark red-brown, quite narrow, extending to two-thirds abdomen length; inframamillary sclerite absent; dorsum densely covered with short white setae; three black bands comprising plumose setae; first at front of abdomen, second at one-quarter abdomen length, third at half abdomen length; first and second bands fusing laterally at second band (Fig. 4).

Genitalic area and booklungs dark red-brown to nearly black, strongly sclerotised. Epigyne with copulatory openings situated laterally, anterior to lateral midline of epigyne, situated in semi-circular depression with strong antero-median ridges (Fig. 5); entrance ducts running in a U-shape, initially directed posteriorly, running medially and anteriorly; spermathecae round, with bean-shaped terminal receptaculae that touch or are slightly separated medially (Figs 6, 7).

*Male*.

Measurements: CL 2.65–3.60, CW 1.79–2.35, AL 2.60–3.35, AW 1.40–1.90, TL 5.50–7.45, FL 0.23–0.26, SL 1.28–1.58, SW 0.90–1.05. Interdistances between eyes: AME–AME 0.12, AME–ALE 0.60, ALE–ALE 0.42, PME–PME 0.20, PME–PLE 0.15, PLE–PLE 0.73.

Length of leg segments (sequence from femur to tarsus, and total): I 2.00+0.70+2.15+1.85+1.54=8.24; II 1.80+0.75+1.65+1.55+1.05=6.8; III 1.85+0.80+1.50+1.75+0.80=6.7; IV 2.80+0.97+2.50+3.05+1.20=10.52.

General habitus similar to female described above; male less robust than female; abdomen more elongate and narrow, broadest at three-quarters its length; dorsal scutum covering entire dorsum; inframamillary sclerite present, rectangular, extending from epigastric furrow to in front of spinnerets.

*Legs*: markings on legs less distinct than for female. Leg spination as follows: femora: I *pl* 1 *do* 3, II *do* 3, III *pl* 2 *do* 3 *rl* 1, IV *pl* 2 *do* 3 *rl* 1; patellae: all with 1 distal *dtr*; tibiae: I *plv* 2 *rlv* 2, II *plv* 1 *rlv* 2, III *pl* 2 *rl* 2 *plv* 2 *rlv* 2 *vt* 2, IV *pl* 2 *do* 1 *rl* 2 *plv* 2 *rlv* 1 *vt* 2; metatarsi: I *plv* 2 *rlv* 2, II *plv* 1 *rlv* 2, III *pl* 3 *rl* 3 *plv* 2 *rlv* 2 *vt* 3, IV *pl* 3 *rl* 3 *plv* 2 *rlv* 2 *vt* 3; all tibiae and metatarsi with numerous *dtr*, increasing in size distally.

Male palp lacking retrolateral tibial apophysis; palpal tarsus compact; cymbium uniform red-brown; bulbus red-brown, somewhat square prolaterally; embolus claw-like, curving prolaterally, with a single, indistinct coil (Figs 1, 8, 9); femur: *pl* 1 *do* 2; patella *pl* 1; tibia *pl* 2; tarsus *do* 1 *pl* 2, *plv* 1.

Holotype: ♀ deposited in MNHN (examined). Two labels accompany the types: '16961 Ap. semiglabrum E.S. / Makapan! // 16961'.

Other material examined: SOUTH AFRICA: *Gauteng*: 1♀ Crocodile River, Hartebeespoortdam, 13.xii.1991, collected from shrubs and trees, A. Leroy (NCA 92/444); 1♀ Florida, Johannesburg, xii.1918, R. Tucker (SAMC B6518). *KwaZulu-Natal*: 1♂ Greater St Lucia Wetlands Park, Hell's Gate, Block B, 29.xi.2004, tsetse fly traps, J. Esterhuizen (NCA 2005/2026); 1♀ Lewombo mission, Zululand, 15.x.1977, under bricks, P. Reavell (NCA 2000/286); 2♂ 1♀ Ndumo Game Reserve, Pongola River floodplain, 26°53'S:32°18'E, 12.ii.2005, leaf litter with *Anoplolepis custodiens* and *Polyrachis gagates* ants, C. Haddad (NCA 2005/48); 1♀ Tembe Elephant Park, Open woodland-sand, 27°03'S:32°25'E, 14.i.2002, under log with *Polyrhachis gagates* ants, C. Haddad (NCA 2004/480); 1♂ same locality, 20.i.2002, under log with *Polyrhachis gagates* ants, C. Haddad (NCA 2004/479). *Limpopo*: 1♀ Gunfontein, 2428A2, 11.xii.1979, Falcon College & C.A. Car (NMZ 1377); 1♂ Klein Kariba, near Warmbaths, 27.xi.1996, running on ground, A. Leroy (NCA 2004/831); 1♀ Settlers, Tuinplaas, Springbokvlake (Lodge), 6.ii.2002, pitfall traps, grass, M. van Jaarsveld (NCA 2003/1331); 1♀ same locality, 6.ii.2002, pitfall traps, grass, M. van Jaarsveld (NCA 2003/1335); 3♂

Wolkberg Nature Reserve, near Haenertsberg, 21.xii.1994, leaf litter, J. Leeming (NCA 2004/832). SWAZILAND: 1♂ Lugaganeni, 29.xii.1998, A. Monadjem (NCA 2004/828). ZIMBABWE: 1♂ Bulawayo, Hillcrest, 2028B1, 12.ii.1991, L.H.B. Morris (NMZ 8746); 1♀ Bulawayo, Hillside, 20º10'S:28º55'E, iii.1986, J.L. Minshull (NMZ 4341); 3♀ same locality, ii.1999, pitfall traps, M. FitzPatrick (NMZ 13838); 2♀ same locality, iii.1999, pitfall traps, M. FitzPatrick (NMZ 13863); 4♂ 3♀ same locality, ii.1999, pitfall traps, M. FitzPatrick (NMZ 13851); 1♀ Bulawayo, Natural History Museum, 2028B1, 13.xi.1985, I. Minshull (NMZ 5384); 1♂ Chiredzi, 2131B1, 16.xii.1979, S. Higgins (NMZ 809); 1♀ Nungu Farm, Girls College, 20º30'S:28º29'E, 9–12.ii.1999, sweeping, NHMZ staff (NMZ 13712).

Distribution: Found in the northern and north-eastern parts of South Africa, Swaziland, and in the southern and south-eastern parts of Zimbabwe. Specimens have also been collected from Harare, Zimbabwe (M. Cumming, personal collection).

Biology: The bulk of the *C. semiglabrum* material examined was collected in pitfall traps or leaf litter, indicating that this is a primarily epigeic species. Observations of the species were conducted in the Tembe Elephant Park and Ndumo Game Reserve in South Africa, where it was found under logs, in leaf litter and in low foliage with the large silver-grey ant *Polyrhachis gagates* Smith, 1858 (Hymenoptera: Formicidae), which it mimics. At Ndumo, this species was also found near a colony of *Anoplolepis custodiens* (Smith, 1858) ants, with a few *P. gagates* ants in the near vicinity. The ant-mimicking *Apochinomma formicaeforme* was also found in association with this ant. Both species appear silver-grey in appearance, an effect which is achieved by silvery-white setae on the abdomens of these species. In *C. semiglabrum*, the mimicry effect is enhanced by three black transverse bands on the abdomen, which resemble the abdominal segments of their model. In *A. formicaeforme*, the carapace is much more elongate and the abdomen more globose, creating a better illusion than in *C. semiglabrum*. A single egg sac was produced by a captured female. It was round, constructed of tough, papery creamy-yellow silk (typical for Castianeirinae), and was 8.8 mm in diameter. This sac contained 16 oval, cream eggs.

### **Corinnomma lawrencei** sp. n.

Figs 2, 10–15

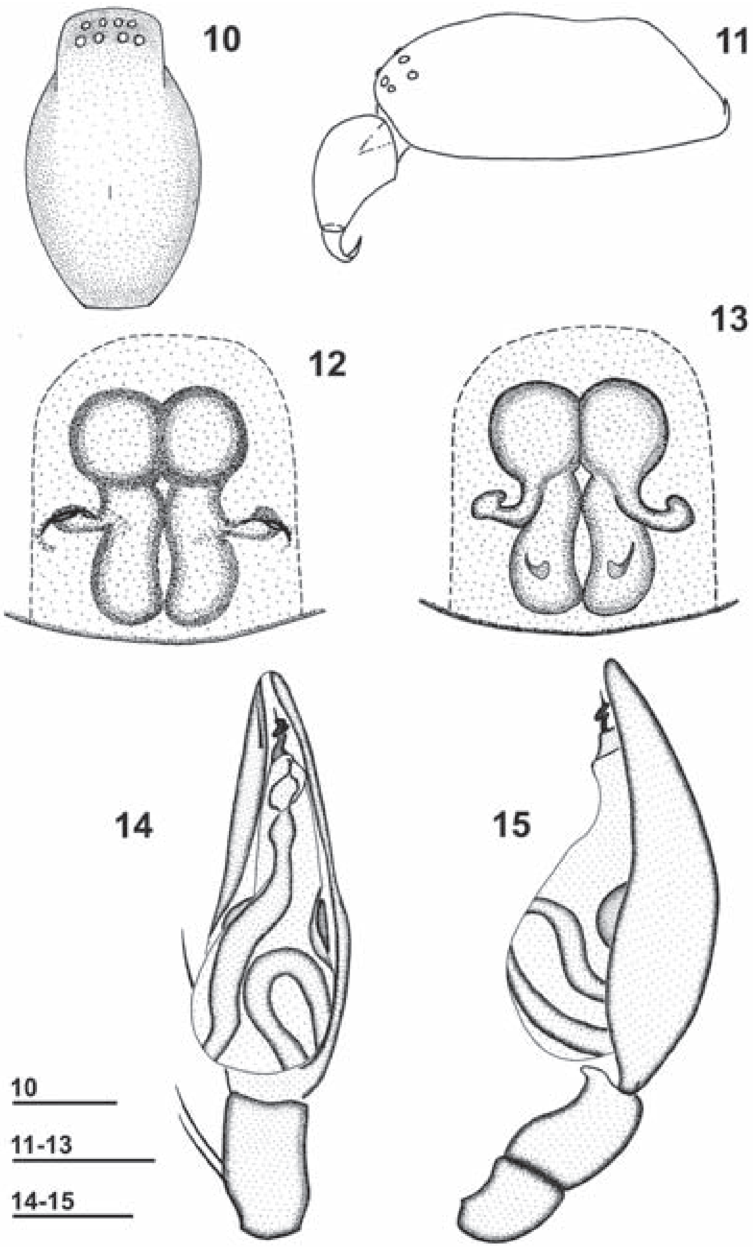
Etymology: This species is named in honour of Dr R.F. Lawrence, prominent arachnologist of the last century and collector of part of the type series.

Diagnosis: This species is distinguished from others in the genus by the small epigyne and the medially directed entrance ducts. Judging from epigyne shape, *C. lawrencei* appears most closely related to *C. thorelli* Simon, 1905. It can be distinguished by the distinct separation of the terminal receptaculae of the spermathecae, which are directed medially; those of *C. thorelli* lie against each other and are directed laterally (Deeleman-Reinhold 2001).

Description:

*Female*.

Measurements: CL 3.40–3.85, CW 2.15–2.30, AL 3.60–4.10, AW 2.40–2.70, TL 7.40–8.10, FL 0.35–0.40, SL 1.60–1.78, SW 1.13–1.20. Interdistances between eyes: AME–AME 0.13, AME–ALE 0.07, ALE–ALE 0.52, PME–PME 0.23, PME–PLE 0.20, PLE–PLE 0.83.



Figs 10–15. *Corinnomma lawrencei* sp. n., paratypes: (10, 11) female cephalothorax, dorsal and lateral views; (12) female (Inhambane), epigyne, ventral view; (13) female (Inhambane), vulva, dorsal view; (14, 15) male (Ndumo), left palp, ventral and retrolateral views. Scale bars: Figs 10, 11 = 1.0 mm; Figs 12–15 = 0.25 mm.

Length of leg segments (sequence from femur to tarsus, and total): I 2.35+0.88+2.30+1.90+1.35=8.78; II 2.23+0.85+1.88+1.68+1.20=7.84; III 2.00+0.90+1.68+1.78+0.93=7.29; III 3.00+1.15+2.80+3.05+1.15=11.15.

*Cephalothorax*: Carapace dark brown to nearly black, finely wrinkled, clothed in very short white setae; elongate, broadest at midpoint (Fig. 10); highest at nearly one-third its length (Fig. 11). Fovea distinct, located slightly posterior to carapace midpoint; striae black, radiating outwards from fovea, fused to black markings laterally on carapace. AER straight, median eyes larger; PER slightly recurved, eyes similar in size; all eyes surrounded by black rings; scattered white plumose setae on clypeus. Chelicerae bulging slightly (Fig. 11), dark brown; long, pale setae on prolateral margin with scattered short white setae between; two teeth on promargin, proximal tooth bifid with single base; two simple teeth on retromargin. Sternum dark brown, nearly black, with faint black mottling; surface slightly granular; densely clothed with short white setae medially, and longer white setae near margins; single long erect black seta on sternum near each coxal base.

*Legs*: Femora I dark brown to black in proximal half, yellow distally; dark brown *do* stripe extending to end of femora; femur II entirely black dorsally, yellow at distal end; femora III and IV dark brown, with yellow marking *pl* at distal end. Patella I and II yellow with dark brown *plv* and *rlv* stripes; patellae III and IV dark brown. Tibiae I and II yellow dorsally with brown median stripe, yellow ventrally with brown *plv* and *rlv* stripes; tibiae III and IV dark brown. All metatarsi brown, with yellow distal tips. All tarsi orange-brown, darker in *do* proximal half; black markings on legs comprising plumose setae. Leg spination as follows: femora: I *pl* 1 *do* 3, II *do* 3, III *pl* 2 *do* 3 *rl* 1, IV *pl* 2 *do* 3 *rl* 1; patellae: all patellae with distal *do* tr; tibiae: I *plv* 3 *rlv* 1–2, II *plv* 1–2 *rlv* 1–2, III *pl* 2 *do* 1 *rl* 2 *plv* 2 *rlv* 1 *vt* 2, IV *pl* 2 *do* 1 *rl* 2 *plv* 2 *rlv* 1 *vt* 2; metatarsi: I *plv* 2 *rlv* 2, II *plv* 2 *rlv* 2, III *pl* 3 *rl* 3 *plv* 2 *rlv* 2 *vt* 3, IV *pl* 3 *rl* 3 *plv* 2 *rlv* 2 *vt* 3. Palp dark brown, nearly black. Femora: *pl* 1 *do* 2, *rlv* 4; patellae *pl* 1 *do* 1; tibiae *pl* 2 *do* 2; tarsi *pl* 1 *do* 1 *rl* 1. Single small terminal pectinate claw.

*Abdomen*: Oval, slightly globose, integument grey, broadest at two-thirds its length; leathery dorsal scutum present, dark red-brown, narrow, extending to two-thirds abdomen length; inframamillary sclerite absent; dorsum densely covered with short white setae; four black bands comprising plumose setae; first at front of abdomen, extending to epigastric sclerite; second at one-sixth abdomen length and third at one-third abdomen length, both fusing laterally at third band; fourth band broadest, extending from half to two-thirds abdomen length (Fig. 11). Genitalic area and booklungs dark red-brown to nearly black, strongly sclerotised. Epigyne with copulatory openings situated laterally (Fig. 12), approximately at midpoint of epigyne; entrance ducts initially directed medially, curving upwards to spermathecae (Fig. 12). Spermathecae round with bean-shaped terminal receptaculae (Fig. 13).

*Male*.

Measurements: CL 2.70–2.90, CW 1.75–1.83, AL 2.90–3.00, AW 1.50–1.60, TL 5.80–5.95, FL 0.25–0.28, SL 1.20–1.23, SW 3.55–3.60. Interdistances between eyes: AME–AME 0.10, AME–ALE 0.05, ALE–ALE 0.39, PME–PME 0.17, PME–PLE 0.14, PLE–PLE 0.64.

Length of leg segments (sequence from femur to tarsus, and total): I 1.83+0.63+1.78+1.70+1.33=7.27; II 1.60+0.70+1.43+1.45+1.05=6.23; III 1.48+0.68+1.28+1.55+0.80=5.79; IV 2.48+0.88+2.23+2.70+1.05=9.34.

General habitus similar to female described above; male less robust than female; abdomen elongate and narrow, broadest at three-quarters its length; dorsal scutum covering entire dorsum; inframamillary sclerite present, rectangular, extending from epigastric furrow to in front of spinnerets.

*Legs*: markings on legs less distinct than for female. Leg spination as follows: femora: I *pl* 1 *do* 3, II *do* 3, III *pl* 2 *do* 3 *rl* 1–2, IV *pl* 2 *do* 3 *rl* 1; patellae: all with 1 distal *dtr*; tibiae: I *plv* 2 *rlv* 1, II *plv* 2 *rlv* 1, III *pl* 2 *do* 1 *rl* 2 *plv* 2 *rlv* 1 *vt* 2, IV *pl* 2 *do* 1 *rl* 2 *plv* 2 *rlv* 1 *vt* 2; metatarsi: I *plv* 2 *rlv* 2, II *plv* 2 *rlv* 2, III *pl* 3 *rl* 3 *plv* 2 *rlv* 2 *vt* 3, IV *pl* 3 *rl* 3 *plv* 2–3 *rlv* 2 *vt* 3; all tibiae and metatarsi with numerous *dtr*, increasing in size distally.

Male palp without retrolateral tibial apophysis; palpal tarsus compact; cymbium dark brown, paler distally; bulbus red-brown, rounded prolaterally; embolus prolaterally on bulbus, with short thin stalk and one and a half short compact coils (Figs 2, 14, 15); femur: *pl* 1 *do* 2; patella *pl* 1; tibia *pl* 2; tarsus *pl* 2, *plv* 1.

Holotype: ♀ 'Mozambique / Maxixe, Inhambane / 23°52'S 35°23'E / Dec. 1923 / R.F. Lawrence // Clubionidae / South African Museum / Cape Town / B7159 //' (SAMC B7159).

Paratypes: 1♀ same data and depository as holotype. 2♂ 2♀ 'R.S.A., Ndumo Game Reserve / Pongola River Floodplain / 26°53'21.7"S 32°18'53.5"E / 09.II.2005 / C. Haddad (Leaf litter) //' (NCA 2005/45).

Other material examined: 1 juvenile same data and depository as holotype. SOUTH AFRICA: *Limpopo*: 2♂ 1♀ Lajuma, Short Forest 3, 23º02.165'S:29º26.985'E, 27.xi.2004, active searching, M. Mafadza (NCA 2005/2018); 2♂ same locality, Short Forest 4, 23º02.388'S:29º26.398'E, 27.xi.2004, active searching, M. Mafadza (NCA 2005/2017). TANZANIA: 1♀ Udzungwa Mountain National Park, x.2001, hand collecting, G. Callaham (NCA 2005/2030).

Distribution: Found in the eastern regions of Tanzania, Mozambique and South Africa.

Biology: This species was found near a nest of *Anoplolepis custodiens* ants in Ndumo Game Reserve, together with *C. semiglabrum*, a *Castianeira* species, *Merenius alberti* Lessert, 1923 and *P. gagates* ants, which it mimics. Initial feeding trials in the laboratory with two male *C. lawrencei* indicate that they do not feed on workers of *A. custodiens* or *P. gagates*, and within the restricted confines of a Petri dish, both spiders were badly injured by the ants, losing several legs. This species is almost identical to *C. semiglabrum* in general appearance, and the two species can only be separated by genitalic and eye characteristics. Adaptations for mimicry of *P. gagates* are similar to those described for *C. semiglabrum* above.

## *Corinnomma olivaceum* Simon, 1896

Figs 16, 17

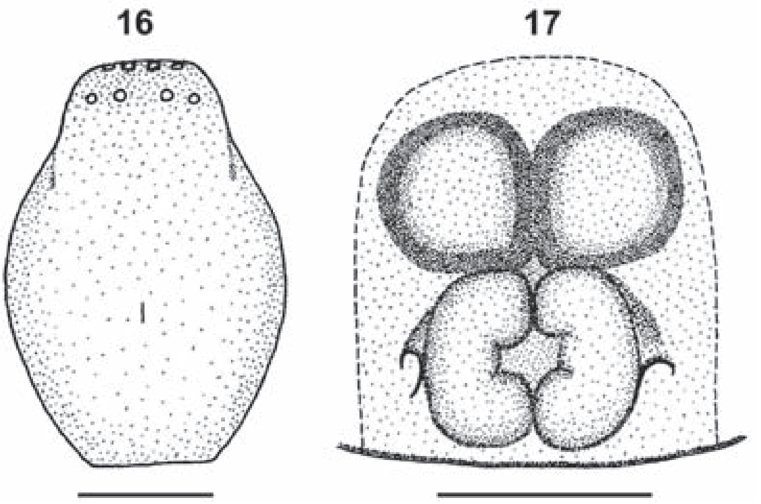
*Corinnomma olivaceum*: Simon 1896: 403.

Diagnosis: This species can be recognised by PME–PME eye interdistance, which is greater than in the other two species (Fig. 16), and the entrance ducts, which are directed anteriorly (Fig. 17).

Redescription:

*Female*.

Measurements: CL 3.03, CW 2.03, AL 3.10, AW 1.88, TL 6.50, FL 0.23, SL 1.45, SW 1.13, AME–AME 0.10, AME–ALE 0.05, ALE–ALE 0.40, PME–PME 0.18, PME–PLE 0.10, PLE–PLE 0.65.



Figs 16, 17. *Corinnomma olivaceum* Simon, holotype: (16) cephalothorax, dorsal view; (17) female epigyne, ventral view. Scale bars: Fig. 16 = 1.0 mm; Fig. 17 = 0.3 mm.

Length of leg segments (sequence from femur to tarsus, and total): I 2.10+ 0.85+1.93+1.62+1.15=7.65; II both legs missing; III 1.95+0.75+1.40+1.60+0.80=6.50; IV 2.60+0.90+2.50+2.75+1.00=9.75.

The following is a translation of Simon's (1896) description:*

Cephalothorax: Black, finely wrinkled, both sides clothed in downy whitish hairs, shiny golden-yellow medially. Abdomen: Narrow oblong, dark olive green on basal part (in mature specimens), covered with large spot on the back which is enlarged and shortened, with very shiny golden yellow setae, on apical part shiny golden yellow pubescent when mature but narrow and black near spinnerets, and in the middle a distinctive white spot, underneath in front whitish, at the back olive green, smaller when mature and on both sides covered with a pair of oblique whitish spots, in the region of the epigastric furrow leathery, black, near the edge two small indents. Sternum black, finely wrinkled, covered with small and minute white hairs. Claws arched, black, smoothly wrinkled. Tarsi ordinary, slender, front shiny, tibiae, except at apex, black, patellas with black lines on both sides, metatarsi 1 dark towards apex; four tarsi black at the back [referring to scopulae?], metatarsi reddish, tarsi yellowish-brown; tibias 1 with small spines 2–1, tibia 2 with 2 spines, all four metatarsi spined in front 2–2, armoured underneath. Pedipalps black, tarsus slightly brighter apically. – Northern Abyssinia.

*Male*. Unknown.

Holotype: ♀ deposited in MNHN (examined). Two labels accompany the types: 'Abyssinia, E. Simon, 3405 // C. olivaceum E.S.'.

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*On examination of the holotype of *C. olivaceum* and study of Simon's (1896) description of the species made in Latin, it is clearly evident that the specimen has faded dramatically to an orange colour. Unfortunately, no fresh material of this Ethiopian species was available for examination. Consequently, a translation of the original description is provided, which will describe more accurately specimens found in nature. Where doubts arise as to the meaning of Simon's wording, comments have been included in square brackets. Both second legs of the holotype are missing.

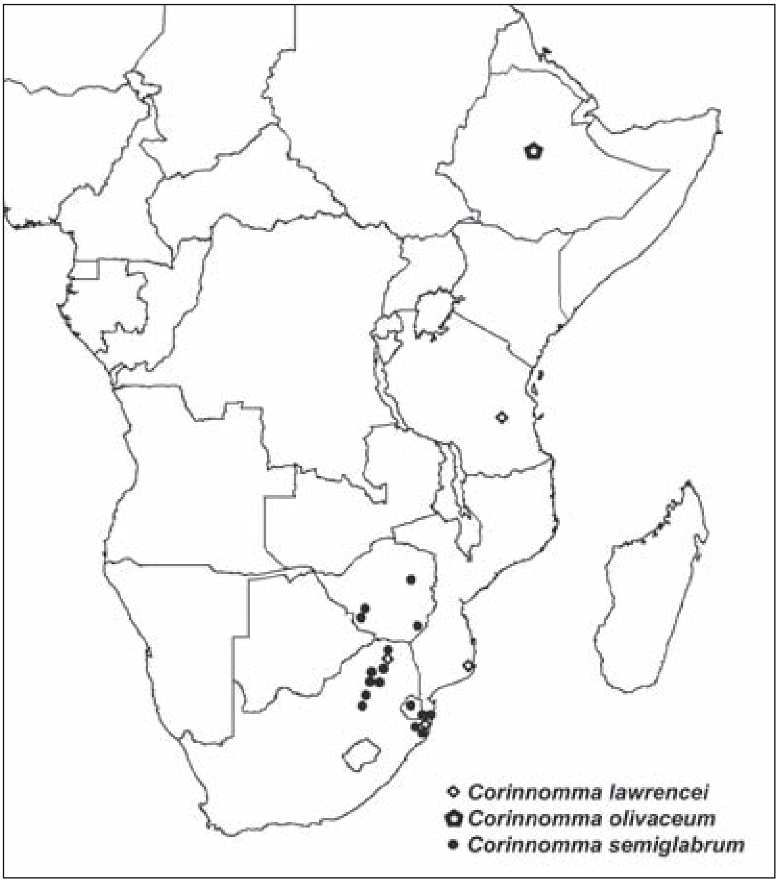

Fig. 18. Distribution of *Corinnomma* in the Afrotropical region.

Distribution: Currently known only from the type locality in Ethiopia.

Biology: Unknown.

## DISCUSSION

The present study increases the number of Afrotropical *Corinnomma* species to three. There are likely, however, to be additional as yet undescribed species on the African continent, but the lack of adequate literature to distinguish castianeirine genera and the large number of unidentified specimens may be responsible for the apparently poor representation of this genus in collections. A further factor that may account for poor representation of *Corinnomma* is the fact that most species are vegetation and tree canopy dwellers in forest biomes (Deeleman-Reinhold 2001), and the latter stratum has, in particular, been very poorly sampled in Africa.

It must be noted that this is a preliminary paper on the genus in the region. The Afrotropical *Corinnomma* have similar general morphology and colouration to the Asian species, but differ by the recurved posterior eye row compared to the procurved posterior row of the Asian species. Although such differences have also been reported in the genus *Graptartia* in the Afrotropical region (Haddad 2004), the possibility exists that the Afrotropical *Corinnomma* may represent a distinct species group of the genus *Merenius*, with which they share a similar eye pattern and genitalic morphology. Although the colouration of the two genera differs, *Merenius* being dark brown to black with median white markings down the length of the abdomen compared to *Corinnomma* described above, the male palpal emboli of the two genera are remarkably similar. A particularly good example of this is *C. lawrencei* (Fig. 2), which has a similar embolic structure to *M. alberti* from South Africa and *M. simoni* Lessert, 1921 from East Africa. Further support for additional studies of *Corinnomma* are that the Asian species are primarily canopy dwellers (Deeleman-Reinhold 2001), while the Afrotropical species are primarily leaf litter dwellers, an ecological characteristic shared with *Merenius*. Therefore, the status of the Afrotropical *Corinnomma* is unclear, and could be resolved when *Merenius* is revised and a cladistic analysis performed on that genus, with *Corinnomma* as one of the outgroups.

The presently known distribution of the genus in the Afrotropical region (Fig. 18) indicates that all species are known only from the eastern parts of the continent. Examination of unidentified material from overseas museums will likely increase the number of species known from Africa and provide a better understanding of the biogeography of the genus.

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